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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/015,747	12/17/2001	Kazuro Yamada	35.C16084	2847

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NEW YORK, NY 10112

EXAMINER

ROBINSON, MYLES D

ART UNIT	PAPER NUMBER
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2625

DATE MAILED: 09/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/015,747	Applicant(s) YAMADA, KAZURO	
	Examiner Myles D. Robinson	Art Unit 2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 April 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 December 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4/26/2002</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's amendment was received on 4/20/2006, and has been entered and made of record. Currently, **claims 1 – 7** are pending.

Response to Arguments

2. Applicant's arguments filed 4/20/2006 with respect to the rejections of **claims 1, 5 and 7** under 35 U.S.C. 102(b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, new grounds of rejection are made in view of **Tamagaki et al.** (U.S. Patent No. 6,040,924) and further in view of **Yamamoto et al.** (U.S. Patent No. 6,192,207).

Regarding **claim 1, 5 and 7**, the Applicant argues that **Tamagaki et al.** (U.S. Patent No. 6,040,924) does not disclose, teach or suggest "that an image printed on page 1 is an image printed in a **monochrome image [mode]**, while an image printed on page 2 is an image printed in a **full color mode**" (see *Remarks [page 9, lines 2 – 4]*) or "how images to be printed in a monochrome image [mode] and a full color mode are managed" (see *Remarks [page 9, lines 9 – 10]*).

However, **Yamamoto et al.** (U.S. Patent No. 6,192,207) does disclose timing signals utilized for printing based upon a particular printing modes, **namely monochrome and full color modes**, wherein forming the visible image is based on an image data sent from an image formation controller (see *Fig. 8 wherein the copying machine determines whether the document contains color or not in step S2*), in a color

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image formation mode for forming a color image (see Fig. 8, either step S7 or “NO” step of S8) or a monochromatic image formation mode for forming a monochromatic image (see also Figs. 14 – 15).

Furthermore, the Applicant argues that Tamagaki does not disclose, teach or suggest “that when a monochromatic image is to be formed on a preceding recording medium and a color image is to be formed on a succeeding recording medium, the signal outputting means outputs the timing signal corresponding to the succeeding recording medium earlier than the timing signal corresponding to the preceding recording medium” (see *Remarks [page 9, lines 4 – 8]*).

However, Tamagaki does disclose that when a monochromatic image is to be formed on a preceding recording medium and a color image is to be formed on a succeeding recording medium, the signal outputting means outputs the timing signal corresponding to the succeeding recording medium earlier than the timing signal corresponding to the preceding recording medium (see *Fig. 21 wherein Page 1 which only has black data outputs K1 signal before Page 2 which yellow data Y2 is outputted to print*).

Furthermore, the Applicant argues that Tamagaki does not disclose, teach or suggest “a timing signal outputting part that outputs a timing signal for instructing to start a formation of a first color component image differing depending on image forming modes, the timing signal being outputted via common signal line to the image formation controller” (see *Remarks [page 9, lines 10 – 13]*).

However, Tamagaki does disclose a timing signal outputting part (see Figs. 2 – 3, CPU 34) that outputs a timing signal for instructing to start a formation of a first color component image (CPU 34 drives image data output portion 32 comprising laser control unit 32a for performing pulse-width modulation based on the imaged data for each color, CPU 34 drives laser printer unit 43 with control signals as shown in Fig. 3, and see Figs. 20 – 21, steps S154, S158, S162, wherein anyone of CMY color component signals may be written first depending on any of the flowchart decision steps S151, S155, S159 and the time chart of Fig. 21 is **to control the plurality of tandem recording units Pa, Pb, Pc, Pd with (reading of) four HDs so as to perform printing of respective printing of colors**), the timing signal being output via a common signal line to said image formation controller (see Fig. 2 wherein CPU 34 sends data from HD memories 33b, 33c, 33d, 33e along a common bus to image data output portion 32 and Fig. 3 wherein CPU 34 sends control signals [see legend] to image data output portion 32 and laser printer unit 43) but Tamagaki does not explicitly disclose a timing signal outputting part that outputs a timing signal for instructing to start a formation of a first color component image differing depending on image forming modes.

However, Yamamoto discloses a timing signal outputting part that outputs a timing signal for instructing to start a formation of a first color component image differing depending on image forming modes (see Figs. 14 – 15 wherein the timing chart of signals that control photosensitive drums 48C, 48M, 48Y, 48K depend on the operation mode, whether full-color or monochrome, and differ based upon mode time difference Δt).

Therefore, the Applicant's arguments regarding claim 1, 5 and 7 are considered not persuasive. Please cite rationale of the grounds of rejection below for further explanation.

Information Disclosure Statement

3. The examiner has considered the references listed in the Information Disclosure Statement (IDS) submitted on 4/26/2002 (see attached PTO-1449).

Drawings

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the common signal line must be shown or the feature(s) canceled from the claim(s) (*see Specification wherein a serial communication link is not shown in the Drawings [page 17, lines 9 – 10] yet a common signal line is recited in claims 1 and 7*). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for

consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

5. The amended specification and title were received 1/6/2006 and are considered acceptable.

Claim Objections

6. The following quotation of 37 CFR 1.75(a) is the basis of the objection:

- (a) The specification must conclude with a claim particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention or discovery.

7. **Claims 1 – 7** are objected to under 37 CFR 1.75(a) as failing to particularly point out and distinctly claim the subject matter which the applicant regards as his invention or discovery.

Claim 1 recites the limitations "a monochromatic image" in line 13 and "a color image" in line 14 of the claim after the limitations "a monochromatic image" and "a color image" were claimed in lines 4 and 3, respectively, of the claim. The applicant has failed to particularly point out and distinctly claim if the applicant is referring to the same, instant "monochromatic image" or a unique and distinctly different "monochromatic

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image” or if the applicant is referring to the same, instant “color image” or a unique and distinctly different “color image” within the claim. All claims dependent upon this claim suffer the same deficiency and, therefore, are objected to as well.

Claim 7 recites the limitations “a monochromatic image” in line 11 and “a color image” in line 12 of the claim after the limitations “a monochromatic image” and “a color image” were both claimed in line 4 of the claim. The applicant has failed to particularly point out and distinctly claim if the applicant is referring to the same, instant “monochromatic image” or a unique and distinctly different “monochromatic image” or if the applicant is referring to the same, instant “color image” or a unique and distinctly different “color image” within the claim.

Claim Rejections - 35 USC § 112

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. **Claims 2 – 4** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 2 and 3 recite the limitations “said timing signal outputting parts” in line 2 of both claims. There is insufficient antecedent basis for these limitations in these claims. It is unclear and indefinite because the parent claim 1 recites “a timing signal outputting part” as in a singular part wherein “said timing signal outputting parts” is in

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regards to a plurality of parts. All claims dependent upon this claim suffer the same deficiency and, therefore, are rejected as well.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. ***Claims 1, 2 and 5 – 7*** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Tamagaki *et al.*** (U.S. Patent No. 6,040,924) in view of **Yamamoto *et al.*** (U.S. Patent No. 6,192,207).

Referring to **claim 1**, Tamagaki discloses an image processing apparatus (see *Fig. 1 wherein the overall digital color copier is described*) for forming a visible image on a recording medium conveyed by conveying means (see *Fig. 1, transfer conveyor belt mechanism 13 conveys paper passed fixing unit 17 and image forming stations Pa, Pb, Pc, Pd which fixes toner image thereon, column 7, lines 33 – 47 and 56 – 67*), said apparatus having:

a plurality of color component image forming units that form a color component image respectively corresponding to a color component including at least black (see *Fig. 1, image forming stations Pa, Pb, Pc, Pd, column 8, lines 1 – 15, 25 – 33 and column 9, lines 6 – 10*),

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a timing signal outputting part (see Figs. 2 – 3, CPU 34) that outputs a timing signal for instructing to start a formation of a first color component image (CPU 34 drives image data output portion 32 comprising laser control unit 32a for performing pulse-width modulation based on the imaged data for each color [column 10, lines 4 – 9 and 22 – 27], CPU 34 drives laser printer unit 43 with control signals as shown in Fig. 3 [column 10, lines 52 – 60], and see Figs. 20 – 21, steps S154, S158, S162, wherein anyone of CMY color component signals may be written first depending on any of the flowchart decision steps S151, S155, S159 [column 15, lines 40 – 56]), the timing signal being output via a common signal line to said image formation controller (see Fig. 2 wherein CPU 34 sends data from HD memories 33b, 33c, 33d, 33e along a common bus to image data output portion 32 and Fig. 3 wherein CPU 34 sends control signals [see legend] to image data output portion 32 and laser printer unit 43),

wherein, when a monochromatic image is to be formed on a preceding recording medium (see Figs. 20 – 21 wherein the “NO” steps of S151, S155 and S159 and the “YES” step of S163 result in a monochromatic image (K data, or black data) written in S166 as the first page shown in Fig. 21) and a color image is to be formed on a succeeding recording medium (see Figs. 20 – 21 wherein in any one of the “YES” steps of S151, S155 and/or S159, regardless of the decision in step S166, result in a color image (C and/or M and/or Y data) written in steps S154, S158, S162 as the second page in Fig. 21 [column 15, lines 40 – 60]), said signal outputting means outputs and timing signal corresponding to the succeeding recording medium earlier than said timing signal corresponding to the preceding recording medium (see Fig. 21 wherein Page 1

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which only has black data outputs K1 signal before Page 2 which yellow data Y2 is outputted to print [see above rationale and column 15, lines 40 – 60] and the time chart of Fig. 21 is to control the plurality of tandem recording units Pa, Pb, Pc, Pd with (reading of) four HDs so as to perform printing of respective printing of colors (column 15, line 66 – column 16, line 4)] but does not explicitly disclose the apparatus further wherein forming the visible image is based on an image data sent from an image formation controller, in a color image formation mode for forming a color image or a monochromatic image formation mode for forming a monochromatic image, and a timing signal outputting part that outputs a timing signal for instructing to start a formation of a first color component image differing depending on image forming modes.

Yamamoto discloses the apparatus wherein forming the visible image is based on an image data sent from an image formation controller (see Fig. 8 wherein the copying machine determines whether the document contains color or not in step S2), in a color image formation mode for forming a color image (see Fig. 8, either step S7 or “NO” step of S8) or a monochromatic image formation mode for forming a monochromatic image (see Fig. 8, either step S12 or “NO” step of S3), and a timing signal outputting part that outputs a timing signal for instructing to start a formation of a first color component image differing depending on image forming modes (see Figs. 14 – 15 wherein the timing chart of signals that control photosensitive drums 48C, 48M, 48Y, 48K depend on the operation mode, whether full-color or monochrome, and differ

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based upon mode time difference Δt [column 18, line 20 – column 19, line 18 and column 20, lines 6 – 33]).

Tamagaki and Yamamoto are combinable because they are both from the same field of endeavor, being color digital printing systems. At the time of the invention, it would have been obvious to one of ordinary skill in the art to include printing image data based upon separate and distinct image forming modes requiring different signal timing charts along with color digital printing systems. The suggestion/motivation for doing so would have been to prevent unnecessary wear and tear on photosensitive drums and to stabilize image transfer, as suggested by Yamamoto (*column 1, lines 20 – 60, column 2, lines 5 – 23 and column 20, lines 25 – 33*).

Referring to **claim 7**, the rationale provided in the rejection of claim 1 is incorporated herein. In addition, the apparatus of claim 1 performs the method of claim 7.

Referring to **claim 2**, Yamamoto discloses the apparatus further wherein said timing signal outputting signal parts output said timing signal when a recording medium conveyed by the conveying means reaches a predetermined position differing in each of said image forming modes (*see Figs. 14 – 15 wherein the timing chart of signals that control photosensitive drums 48C, 48M, 48Y, 48K depend on the operation mode, whether full-color or monochrome, and differ based upon mode time difference Δt such that mode time difference Δt is derived from L_k (transportation path length, or the distance medium conveyed travels, in full-color mode) and L_k' (transportation path length in monochrome mode) which both take into account the position of the medium*

conveyed relative to the position of photosensitive drum 48K [column 18, line 20 – column 19, line 18 and column 20, lines 6 – 33]).

Referring to **claim 5**, Yamamoto discloses the apparatus further having a mode signal outputting part that outputs a mode signal indicative of an image forming mode corresponding to said timing signal (see *Figs. 6 – 7 wherein CPU 101 refers to the management table and judges whether a document image is color or monochrome in step S2 of Fig. 8 [column 13, lines 23 – 28] and CPU 101 outputs signals to photo sensor 76b [see Fig. 8, steps S5, S6, S10, S11] and sets mode setting flags [see Fig. 8, steps S7, S12] depending on the mode [column 13, lines 28 – 52]).*

Referring to **claim 6**, Yamamoto discloses the apparatus further having an image data receiving part that receives, in synchronism with said timing signal (*laser diode driving unit 105 drives photosensitive drums 48C, 48M, 48Y according to image data sent [column 11, lines 35 – 38] in which the timing of scanning performed is controlled by CPU 101 and ROM 106 [column 11, lines 39 – 43]), image data corresponding to respective ones of said color component image forming means in a predetermined order in said color image formation mode (see Fig. 15 wherein photosensitive drums 48C, 48M, 48Y form image in a predetermined order according to the timing chart shown in full-color mode [column 20, lines 16 – 20]), or image corresponding to said black component image forming unit in said monochromatic image formation mode (see Fig. 15 wherein photosensitive drum 48K forms image according to the timing chart shown in monochrome mode [column 20, lines 21 – 24]).*

12. **Claim 3** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Tamagaki et al.** (U.S. Patent No. 6,040,924) in view of **Yamamoto et al.** (U.S. Patent No. 6,192,207) and further in view of **Coriale et al.** (U.S. Patent No. 6,252,618).

Referring to **claim 3**, Tamagaki and Yamamoto disclose the apparatus as discussed above in the rejection of claim 2 but does not explicitly disclose the apparatus further wherein said signal outputting parts precendently output timing signal corresponding to the succeeding when a sum of a length of the preceding recording medium in a conveying direction thereof and a distance between the preceding recording medium and the succeeding medium is shot relative to a distance from said color component image forming unit corresponding to said first color when the color image is formed to said color component image forming unit for forming the monochromatic image.

Coriale discloses the apparatus wherein said signal outputting parts precendently output timing signal corresponding to the succeeding when a sum of a length of the preceding recording medium in a conveying direction thereof and a distance between the preceding recording medium and the succeeding medium is shot relative to a distance from said color component image forming unit corresponding to said first color when the color image is formed to said color component image forming unit for forming the monochromatic image (*see Figs. 4 – 6 [column 4, line 9 – column 5, line 35 and column 6, lines 6 – 16]*).

Tamagaki, Yamamoto and Coriale are combinable because they are both from the same field of endeavor, being color digital printing systems. At the time of the

invention, it would have been obvious to one of ordinary skill in the art to include outputting timing signals based upon the sheet lengths, distances between image forming stations and the space between consecutive sheets conveyed along with color digital printing systems. The suggestion/motivation for doing so would have been to better align scan lines of multiple photoconductive drums within a color printer and to increase printing speed, as suggested by Coriale (*column 1, lines 12 – 45 and column 2, lines 17 – 27*).

13. **Claim 4** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Tamagaki et al.** (U.S. Patent No. 6,040,924) in view of **Yamamoto et al.** (U.S. Patent No. 6,192,207) and further in view of **Kioka** (Japanese Patent No. 02-231344).

Referring to **claim 4**, Tamagaki and Yamamoto disclose the apparatus as discussed above in the rejection of claim 2 but does not explicitly disclose the apparatus further wherein said conveying means, when it continuously conveys a plurality of recording mediums, controls a distance between the recording mediums so as to be constant irrespective of lengths of a conveyed recording mediums in the conveying direction thereof.

Kioka discloses the apparatus wherein said conveying means, when it continuously conveys a plurality of recording mediums, controls a distance between the recording mediums so as to be constant irrespective of lengths of a conveyed recording mediums in the conveying direction thereof (*see Abstract*).

Tamagaki, Yamamoto and Kioka are combinable because they are both from the same field of endeavor, being printing systems. At the time of the invention, it would have been obvious to one of ordinary skill in the art to include spacing out sheets of paper conveyed within printing systems at a constant spacing. The suggestion/motivation for doing so would have been to prevent printing irregularities and to better synchronize image data fed to printing device with the sheet feeding mechanisms of the printing device.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Isaka (Japanese Patent No. 01-146747) discloses an image forming apparatus wherein in a multicolor printer, a paper feed signal is outputted early to a printing part without waiting for the finish of an original multicolor printing full-process when monochromatic printing is performed or mixed.

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Myles D. Robinson whose telephone number is (571) 272-5944. The examiner can normally be reached on M-F 8:30am-5:00pm.

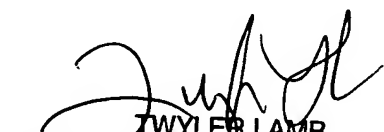
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Twyler M. Lamb can be reached on (571) 272-7406. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



MDR

7/25/06


TWYLER LAMB
SUPERVISORY PATENT EXAMINER